

P. F. COX.
FEEDER FOR STUFFING MACHINES, &c.
APPLICATION FILED AUG. 12, 1905.

924,637.

Patented June 15, 1909.

4 SHEETS—SHEET 1.

Fig. 1.

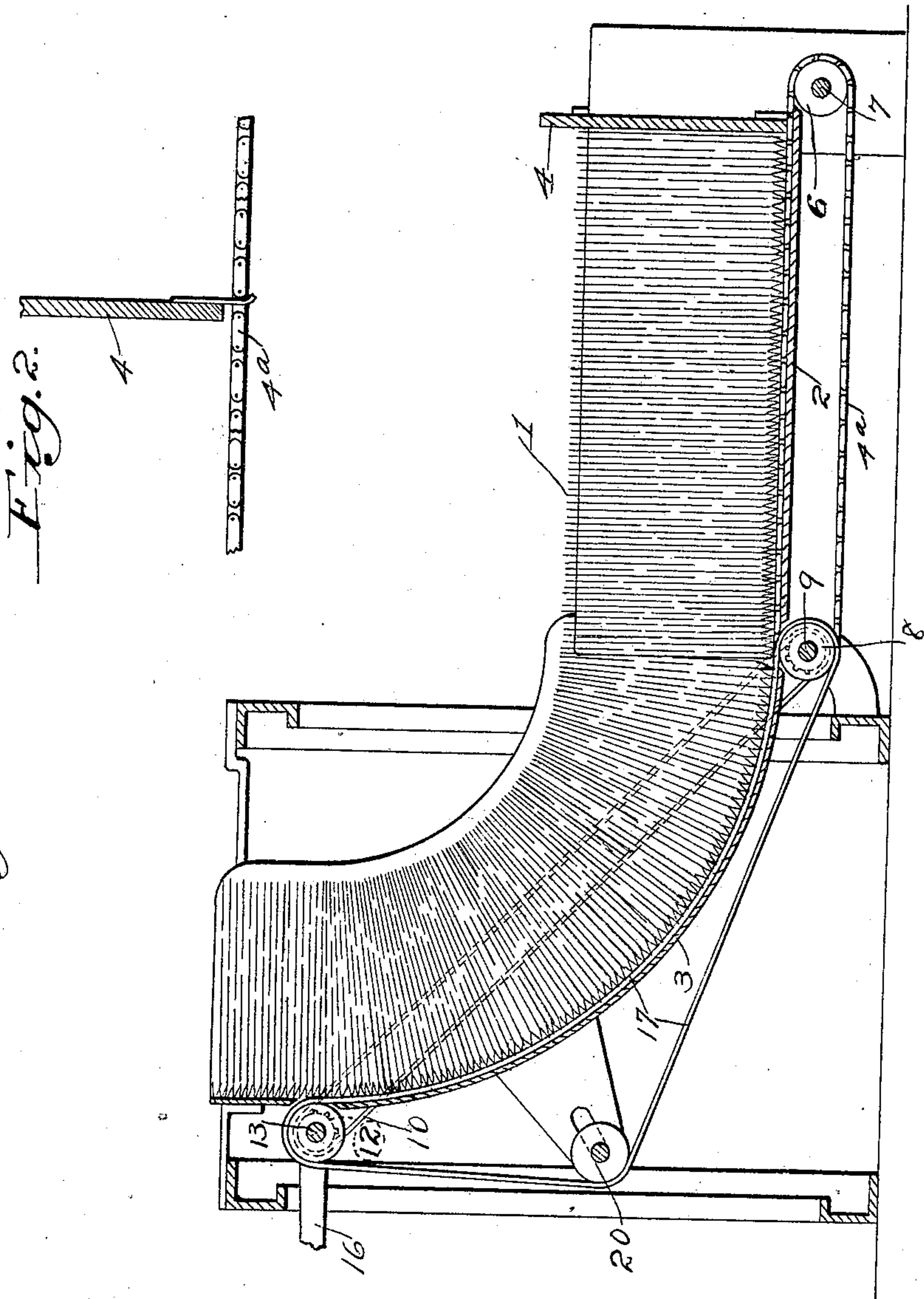


Fig. 2.

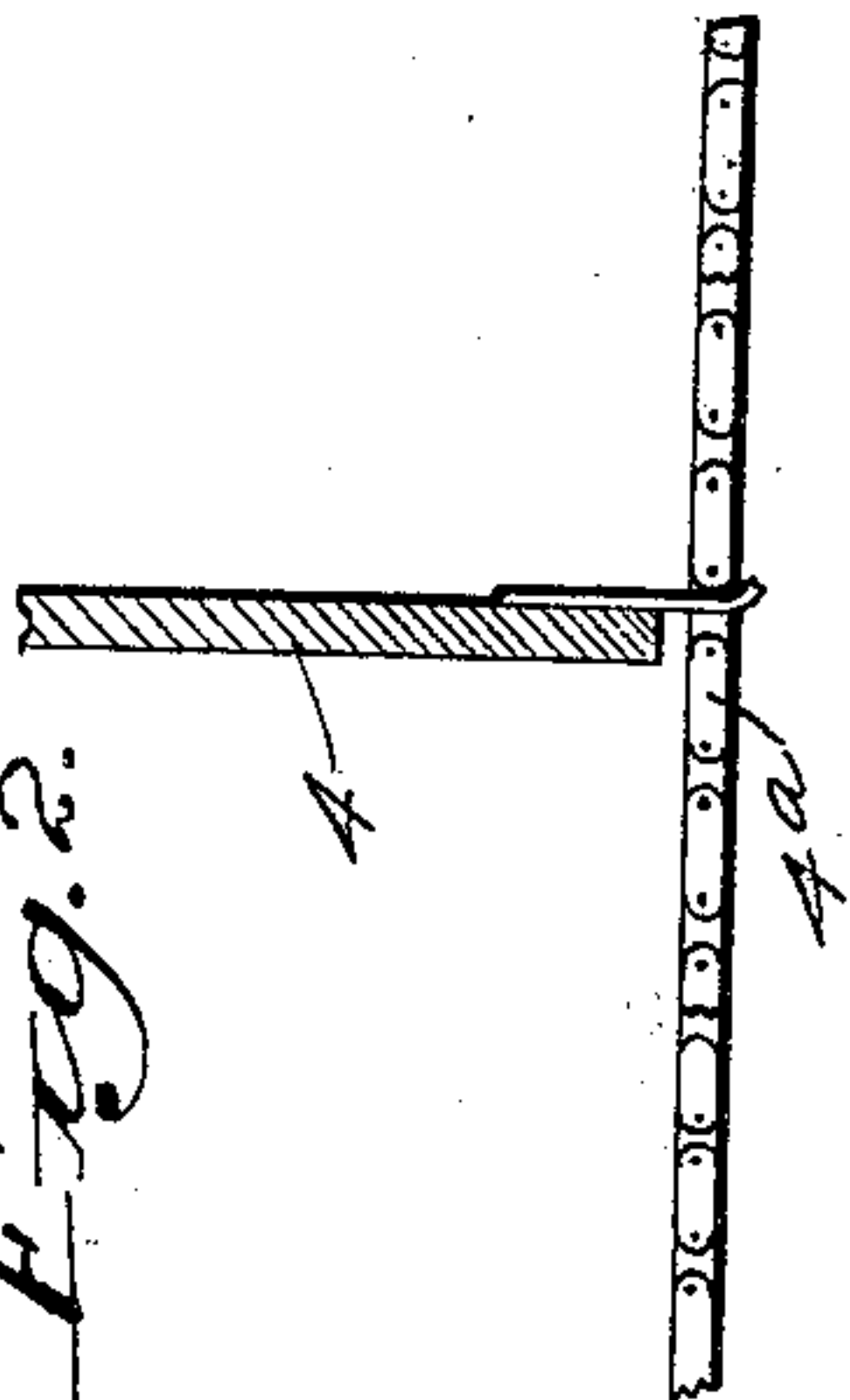
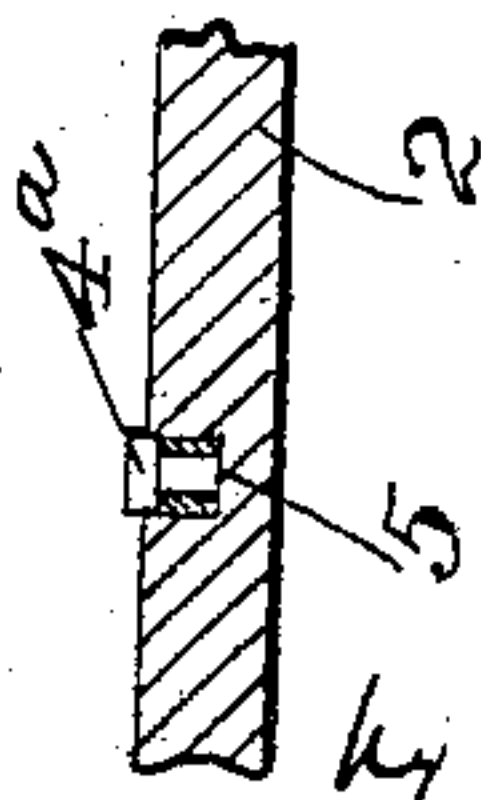


Fig. 3.



Witnesses:
C. H. Plumtree
E. C. Semple

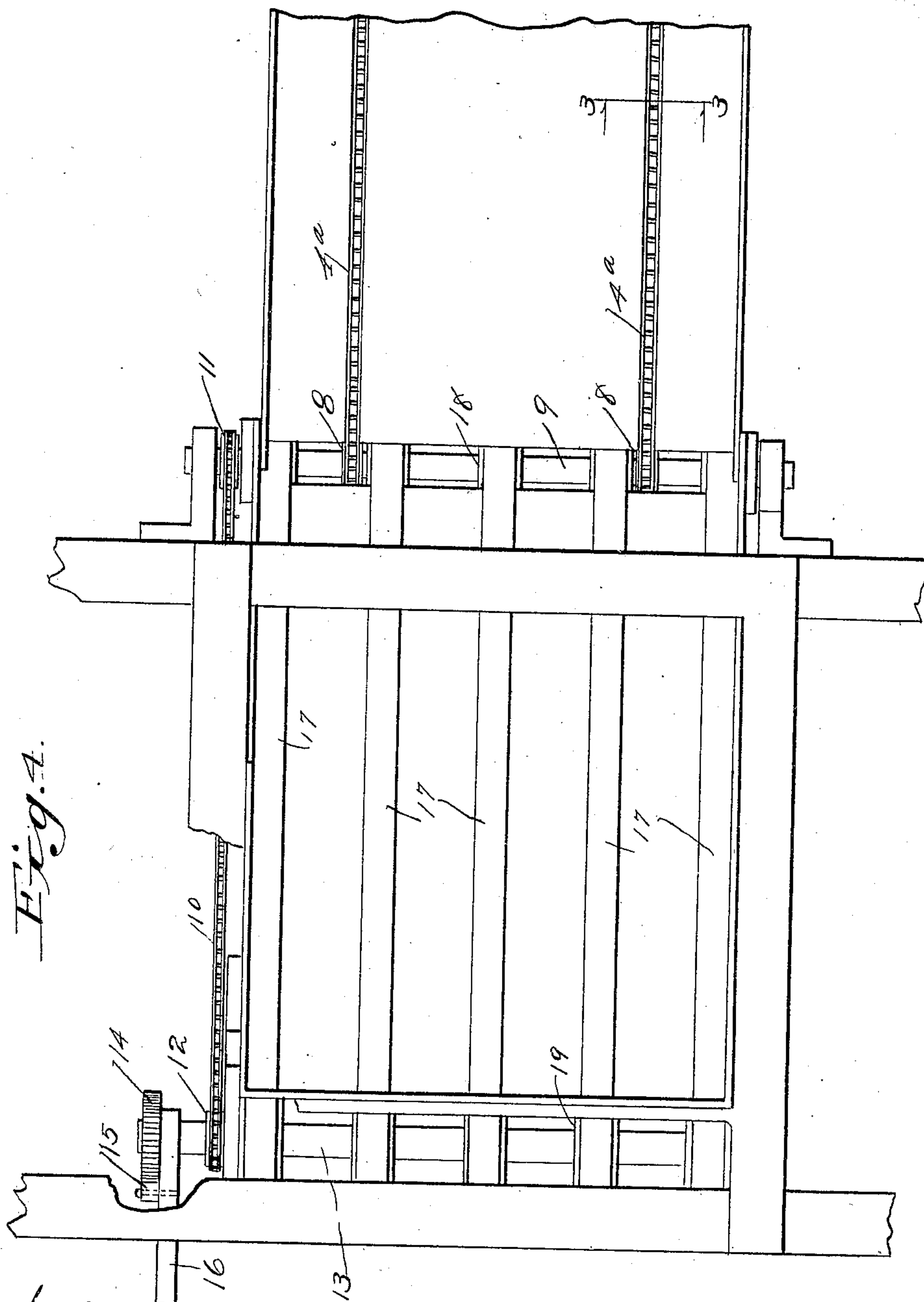
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4 SHEETS—SHEET 2.



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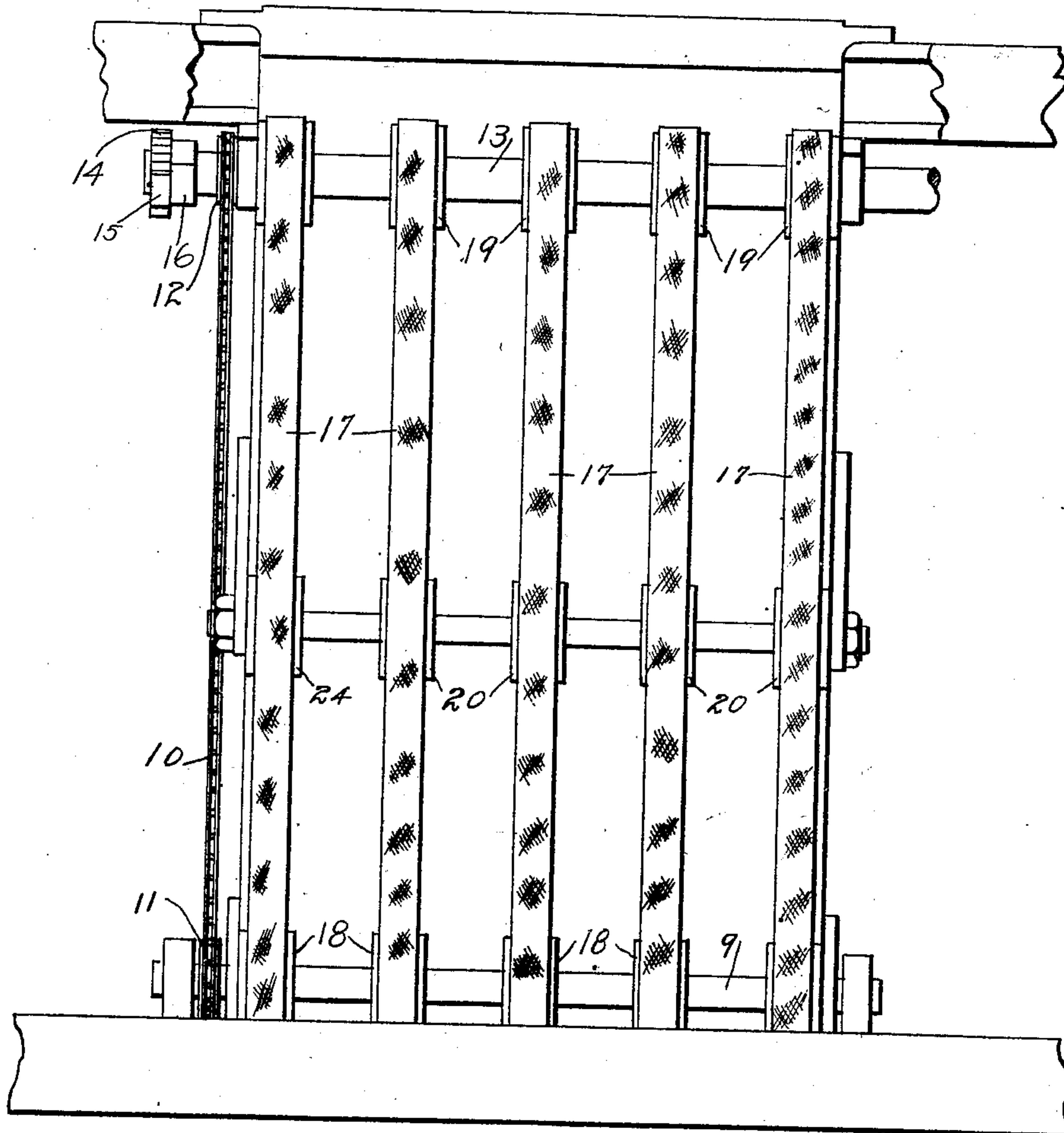
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4 SHEETS—SHEET 3.

Fig. 5.



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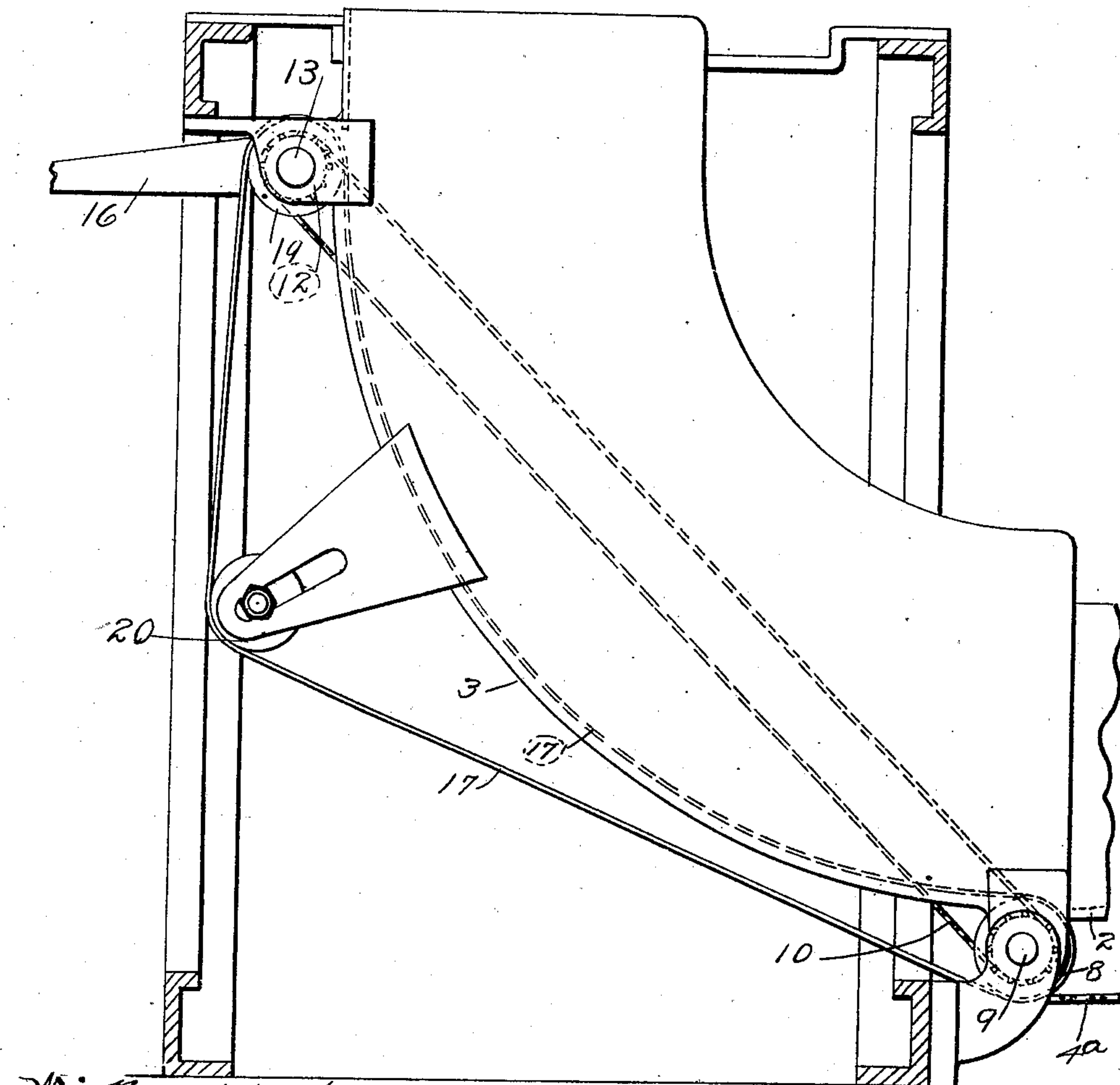
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4 SHEETS—SHEET 4.

Fig. 6.



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UNITED STATES PATENT OFFICE.

PAUL F. COX, OF BATTLE CREEK, MICHIGAN, ASSIGNOR, BY MESNE ASSIGNMENTS, TO STANDARD ASSEMBLER COMPANY, OF AUGUSTA, MAINE, A CORPORATION OF MAINE.

* FEEDER FOR STUFFING-MACHINES, &c.

No. 924,637.

Specification of Letters Patent.

Patented June 15, 1909.

Application filed August 12, 1905. Serial No. 273,904.

To all whom it may concern:

Be it known that I, PAUL F. COX, a citizen of the United States, residing at Battle Creek, in the county of Calhoun and State of Michigan, have invented new and useful Improvements in Feeders for Stuffing-Machines, &c., of which the following is a specification.

This invention relates to means for feeding sheets of paper or other light objects to a certain level or place whence they are removed or operated upon. A machine of this general character might be used for feeding the various folded leaves of book signatures to the mechanism for assembling such leaves to produce the signatures by either the stuffing or the gathering methods; or it might be used for feeding newspapers to addressing or folding machines; for feeding labels to can-labeling machines; or for various other uses.

The invention has for its primary object to provide an improved feeding machine of the described character, in which the supply of papers or leaves may be replenished as desired from the bottom of the supply without interrupting the operation of the machine.

With a view to the attainment of these ends, and the accomplishment of certain other objects which will hereinafter appear, the invention consists in certain features of novelty in the construction, combination, and arrangement of parts, which will now be described with reference to the accompanying drawings, and more particularly pointed out in the claims.

In the said drawings, Figure 1 is a vertical longitudinal sectional view of a feeding machine embodying this invention. Fig. 2 is a detail view of one of the follower chains and the follower, showing the follower in vertical section. Fig. 3 is a detail cross-section on the line 3, 3, Fig. 4. Fig. 4 is a plan view of the machine, partly broken away, on a larger scale than that shown in Fig. 1. Fig. 5 is a back or end view, and Fig. 6 is a side elevation, partly broken away.

The papers, sheets, leaves, or other flat objects to be fed to the plane or level where they are to be operated upon or removed, and which are indicated in dotted lines at 1, in Fig. 1, are placed on edge in the lower horizontal end 2 of a feed hopper or trough

having a curved end or chute 3, which curves gradually in an upward direction from the horizontal portion 2 as a continuation thereof, and serves to guide the papers or leaves upwardly to the plane or level whence they are removed or operated upon according to the character of the machine in connection with which the feeder is used. Such machines are so various it is not deemed necessary to illustrate the same in connection with this invention. Suffice it to say, that when the paper arrives at the upper end of the chute or curved portion 3 it is in position to be taken care of by the other mechanism, which, if a labeling machine, will be provided with means for picking up the top label and passing it to the object to be labeled; if a newspaper-addressing machine, it will be provided with any of the numerous devices for taking the top paper out of the way, etc.

Traversing the horizontal portion 2 of the feed trough or hopper, is a follower 4, which serves to force the sheets or papers lengthwise of this horizontal portion, and by those in the horizontal portion pushing against those in the curved portion or chute 3, cause them to rise to the upper end of the chute 3 at the point or level from which they are removed when otherwise acted upon. The follower 4 is preferably removable, so that by the time it arrives at the inner end of the horizontal portion 2, a further supply of papers may be introduced behind it in the horizontal portion 2 and the follower extracted and replaced at the rear end of the supply, where it is now shown in Fig. 1 of the drawings. The follower may be pushed forwardly against the papers by any suitable means. For this purpose, a pair of sprocket chains 4^a are employed. These chains are in the form of belts running over the bottom of the horizontal portion 2 of the hopper, and are preferably embedded in grooves 5, as shown in Fig. 3, so as to be substantially below the surface of such bottom but at the same time project a little above the bottom, in order that they may act directly upon the lower edges of the sheets or papers 1 and assist the follower 4 in urging the papers forwardly. The chain-belts 4^a at one end run over sprockets 6 mounted upon shaft 7, and at the other end they run over sprockets 8 on shaft 9, which is driven

in the proper direction by a belt 10 and sprocket 11 from a sprocket 12 on a shaft 13, which may be regarded as the driving shaft, and which may be actuated in any suitable way, automatically if desired, though not necessarily so, from the machine in connection with which this feeding device is to be used, so that the papers will be fed at the proper level in the chute 10 automatically as needed. As an example of one means of rotating the shaft 13, a ratchet wheel 14 and pawl 15 are shown, the ratchet wheel being secured to the shaft 13 and the pawl 15 to an arm or lever 16, which may constitute the means for connection with the machine to be fed with the papers. There are various well known automatic mechanisms which are thrown into action by the falling of the level of the supply of papers, and which would serve to oscillate the arm 16, thereby raising the level and throwing the automatic mechanism out of action. As such mechanism constitutes no part of the present invention, it need not be described and shown.

If desired, the papers in the curved portion or chute 3 may be assisted to rise therein by one or more tapes or bands 17, which lie against the bottom or back of the chute 3, and pass around tape pulleys 18 on the shaft 9, and similar pulleys 19 on the shaft 13, and also around a tightener 20 for taking up the slack and keeping them away from the back of the chute or curved portion 3. In operation the papers 6 press the tapes or bands 17 against the bottom or inner face of the chute 3 and make the same conform to the curvature thereof.

What I claim as my invention, and desire to secure by Letters Patent of the United States, is:

1. In an apparatus for the purpose described, the combination of means for holding a supply of sheets in a form, curving to the plane to which they are to be fed, and positive means engaging the edge of the sheets for urging the supply toward that plane as needed.

2. In an apparatus for the purpose described, the combination of a trough or hopper for containing the sheets, curving from a horizontal to a substantially vertical position, and positive means engaging the edge of the sheets for urging the supply of sheets upwardly along the curved part of the hopper.

3. In an apparatus for the purpose described, the combination of a trough or hopper for containing the sheets to be fed, said trough or hopper being curved from a horizontal portion upwardly, a follower adapted to move only along the horizontal portion for urging the papers upwardly in the hopper, and means for driving said follower forwardly.

4. In an apparatus for the purpose described, the combination of a trough or hopper having a horizontal portion, open at its upper side, for receiving the papers to be fed, and a portion curving upwardly from the end of said horizontal portion and constituting a continuation thereof, and positive means engaging the edge of the sheets for urging the papers along said hopper toward its curved end.

5. In an apparatus for the purpose described, the combination of a hopper into which the sheets are inserted on edge, having its bottom curving from a substantially horizontal position to an upright position, and means in the bottom of the hopper engaging the edges of the sheets for feeding the sheets toward the curved end of the hopper.

6. In an apparatus for the purpose described, the combination of a hopper having one end curved from a vertical position to a laterally-extending position and open on the upper side of said lateral portion for receiving the sheets on edge, and removable means for positively urging the supply of sheets toward the upright portion of the hopper.

7. In an apparatus for the purpose described, the combination of a hopper curving from a substantially upright position to a laterally-extending position, belts or tapes in the bottom of the upright portion of said hopper upon which the edge of the papers rest, and means for urging the papers on edge toward the upright end of the hopper.

8. In an apparatus for the purpose described, the combination of a hopper curving from a substantially upright position to a laterally-extending position, belts traveling lengthwise of the hopper in the bottom of the laterally extending portion, and a follower detachably connected to said belts.

9. In an apparatus for the purpose described, the combination of a trough or hopper for containing the sheets, curving from a horizontal to a substantially vertical position, means for urging the supply of sheets toward the curved portion of the hopper, and separate means engaging the edge of the sheets for urging the papers upwardly in said curved portion.

10. In an apparatus for the purpose described, the combination of a trough or hopper for containing the sheets curving from a horizontal to a substantially vertical position, means for urging the supply of sheets toward the curved portion of the hopper, separate means engaging the edge of the sheets for urging the papers upwardly in said curved portion, and a single means for operating both of said means.

11. In an apparatus for the purpose described, the combination of a trough or hopper having a horizontal portion into which the papers are inserted in a substantially vertical plane, a portion of said hopper

curving upwardly from the end of the horizontal portion and constituting a continuation thereof, means for forcing the papers into the curved portion and means for moving the papers through said curved portion and delivering them in a substantially horizontal plane.

In witness whereof, I have hereunto set my hand this 8th day of August, 1905, in the presence of the subscribing witnesses.

PAUL F. COX.

Witnesses:

CHAS. C. GREEN,
J. S. BAKER.